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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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COUNTRY	China	REPORT NO.	25X1A
SUBJECT	Description of Tsinan-Tsingtao and Tientsin-Pukow Railway Lines and Permanent Installations	DATE DISTR.	11 May 1954
		NO. OF PAGES	4
DATE OF INFO.	25X1A	REQUIREMENT NO.	RD
PLACE ACQUIRED		REFERENCES	633057

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
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SOURCE

Alignment and Road Construction

(N 32-57, E 117-26)

1. By December 1953 the Chinese Communists had reconstructed the Tsinan-Tsingtao and Tientsin-Pukow railway lines with the same alignment as that of pre-war days. Both lines were single tracked; the gauge of the track was 1.435 meters, the international standard. The roadbed throughout was crushed stone. The ties were untreated pine from Manchuria, and there were 16 ties per rail. The rails were 10 meters in length and were 43 kilograms per meter (kg./m.) and 30 kg./m. About 10 percent of the rails on the main lines and all rails on sidings were 30 kg./m. The Chinese Communists were standardizing the rails and were replacing all of the 30 kg./m. rails on the main lines with 43 kg./m. rails. The 30 kg./m. rails were being used on less important lines, such as, the Chungking-Chengtu line. The original rails were from Germany and Britain; and during the reconstruction of the lines in 1949, the rails used for replacement were from the United States. Since 1951 all replacements had come from the Soviet Union. No official statistics were published on the average length of life of rails and ties. Rails remained in service as long as they were usable, with no regular replacement schedule. In 1951, 10 kilometers of rails on the Tientsin-Pukow line between Tsinan and Taian (N 36-14, E 117-09) were damaged by faulty locomotive wheels. The rails had to be replaced by Soviet rails, which, according to people used to handling rails, were easily broken. The Ministry of Railways conducted an investigation of this incident and placed the blame on the faulty locomotive wheels. In December 1953 new rails were being obtained from the Soviet Union, Czechoslovakia, and the steel works at Hanyang. They were ordered by the Ministry at the standard weight of 43 kg./m.

Maintenance

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2. Maintenance of the rail lines followed the new Soviet system known as the "Kuo-wa-liao-fu (6753/3907/0055/1133) method". Crews were divided into squads

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which took care of small sections of the lines. Maintenance workers spent one half year studying the new Russian method and one year on a drive to introduce it to new areas. The Ministry of Railways published a handbook covering all the details of maintenance. Maintenance of signals was handled separately by the Electricity Department.

Bridges

3. The Yellow River bridge of the Tientsin-Pukow line at Tsinan had been restored to its former condition. Its capacity was judged at 3,000 pounds per foot (E-30), and its safety was five times (sic). This bridge had been designed originally by the Germans. The Huai River bridge at Pangfou was opened at a ceremony in August 1950. This bridge had passed the Soviet test, but its piers sank five centimeters later. The sinking was discovered about August 1951 during the high-water season when readings were taken to determine the rise in the water. Railway bridge inspectors investigated the situation and confirmed the sinking; but since the movement of traffic was not impaired to any great extent, nothing had been done to correct the sinking by December 1953. The Nationalists built the bridge, then destroyed it during the war. The Communists repaired the bridge by building on top of the old foundations. The original blueprint was followed and the new bridge was a reproduction of the old bridge.

4. There were no electrified sections, no tunnels, and no ferries on either line. Very few snowsheds were built in this area of China because of the temperate climate, but the Communists had installed many slide fences, like those used in the United States for railway maintenance.

Sidings

5. In December 1953 the average distance between sidings on the Tsinan-Tsingtao line was five kilometers. Three new siding stations had been added since the Japanese occupation. The average distance between sidings on the Tientsin-Pukow line was seven kilometers. Several sidings had been added since the war, one of which was not used because it had been built on the top of a hill between Pukow and Pangfou (N 32-57, E 117-26). It was wasteful to stop a train there when the train could coast to the next point on the railway without any further expenditure of fuel. The railway officials wanted to abandon the stop, but the civil engineers had erected station buildings there and wanted the railway to supply personnel to watch the buildings The railway officials thought that the civil engineers should watch the buildings. The waste involved in the construction of the siding and the buildings adjacent to it became an issue in the 3-anti's campaign. The minimum length for a siding was 600 meters effective length. This was the old standard, and in 1952 the Ministry of Railways proposed to extend the length of sidings. In places with more than one siding, there were 4.5 meters between the sidings; and in places with stations, the rail line was 9 meters from the station. There were 4.5 meters between the rail line and the first siding.

Coal and Water Facilities

6. Coaling stations were located only at stations with locomotive offices. On the Tsinan-Tsingtao line they were at Tsinan; Fangtzu (N 36-37, E 119-11), which was turned into a substation by the Chinese Communists; Kaomi (N 36-24, E 119-46), which was taken out by the Chinese Communists; Changtien (N 36-51, E 118-04), and Tsingtao. Coaling facilities were not mechanized and consisted of wooden platforms built parallel to the track, with steps at one end. Coal was loaded by manual labor into the train from this platform. The Poshan coal mining area had special facilities for loading coal into freight cars. These facilities were not mechanized and were in very bad repair, but were under repair in 1953 by the Chinese Communists. All of the ash pits had been restored, and there was a greater number of them than of coaling stations. As a rule, ash pits and water towers were located in the same places.

7. The sources of coal on the Tsinan-Tsingtao line were the mines at Poshan (N 36-32, E 117-51), Tzuch'uan (N 36-41, E 117-57), and Fangtzu. The sources of coal on the

Tientsin-Pukow line were the Huainan (3232/0589) Coal Mine at Chiulungkang (0046/7893/1511), the mine at Liuch'uan (N 34-28, E 117-23), the mine near Hsuchou (N 34-18, E 117-16), and the Chunghsing (0022/5281) Coal Mine at Tsaochuang (N 34-55, E 117-38), which had not yet resumed operations.

8. The sources of water at Tsinan and Tsingtao were wells sunk in the rivers. At Kaomi, Fangtzu, and Changtien sand-filtered river water was used. Unfiltered water from wells sunk along rivers was used at P'uchi (N 36-44, E 117-38) and Tsoshan (N 36-35, E 119-24). River water was used at Yucheng (N 36-37, E 116-38), Changhsia (N 36-29, E 116-54), Taian, Yenchou (N 35-36, E 116-54), Hsuchou (N 34-18, E 117-16), Pangfou, and P'uchen (N 32-08, E 118-44). Except at Pangfou and P'uchen, where there were filtering installations, the water used was unfiltered.

Roundhouses and Turntables

9. There were roundhouses and turntables at Tsingtao, Fangtzu, Changtien, Tsinan, Yenchou, Hsuchou, Pangfou, P'uchen, Tehsien (N 37-27, E 116-17), Tsanghsien (N 38-19, E 116-52), and Tientsin. There was a "Y" at Tz'uyao (approximately N 35-50, E 117-05) on the Tientsin-Pukow line. The Chinese Communists had intended to put "Y's" at all main stations to be used in case the turntables were put out of operation by bombing during a possible future war, but the work had not been done by December 1953.

New and Branch Lines

10. In February 1953 the Fifth Engineering Bureau was formed in Tsingtao to construct the 240-kilometer Ch'ing-Yen (7230/3533) line from Lants'un (N 36-51, E 120-31) to Chefoo along the highway through Shuikout'ou (N 36-05, E 120-33), Chiehkuangt'ing (N 37-10, E 121-05), and Changchiap'u (N 37-20, E 121-15). In May 1953, according to SUNG Lien-ch'eng (1345/6647/1004), deputy chief engineer of the line, construction on the piers for the bridges had begun. The line was scheduled to be completed in June 1954. In the Fifth Engineering Bureau were CHAO Hsi-ch'un (6392/6932/4783), bureau head, who was a Chinese Communist cadre of long standing and who had been head of the Engineering Bureau of the Chungking-Chengtu line; WANG Hsun-ts'ai (3769/6104/2088), deputy bureau head and concurrently chief engineer, who had studied in the United States and who was the former head of the Civil Engineering Bureau of the Tsinan Railway Administration; and SUNG Lien-ch'eng, deputy chief engineer and concurrently chief of the engineering section, who was the former chief of the engineering section of the Tsinan Railway Administration.

11. Old branch lines on the Tientsin-Pukow line that had been reinstated were the Hsin-Wen (2450/3030) line, which was about 40 kilometers long and ran between Tzuyao and Hsint'ai (N 35-56, E 117-49). This line was built by the Japanese, dismantled after the Japanese left, and restored after "liberation" in order to service the coal mine at Hsintai. The Yen-Chi (0350/3444) line, which was about 40 kilometers long and ran between Yenchou and Chining (N 25-27, E 116-39), was dismantled by the Japanese and in December 1953 had not been entirely rebuilt.

12. On the Tsinan-Tsingtao line three siding stations were added to the line, and several very short lines were built to mining areas. The T'ieh-Shan (6993/1472) line, which was about 10 kilometers long and ran from near Chinlingchen (N 36-49, E 118-11) to T'iehshan (approximately N 36-52, E 118-19) was reinstated. This line was originally built by the Germans, but it had been torn up by the Japanese. It was rebuilt by the Chinese Communists when they opened an iron mine at T'iehshan. Three short new lines were built to three airfields located along the Tsinan-Tsingtao line. At Ch'engyang (N 36-18, E 120-24), there was an airfield planned by the Americans and finally built by the Chinese Communists, at Erhshihlipu (N 36-41, E 119-08), a small airfield built by the Japanese and extended by the Communists, and at Chouts'un (N 36-51, E 117-51), a newly-built airfield.

Bottlenecks

13. At two points on the Tsinan-Tsingtao line the flow of traffic was easily disrupted. At Changtien the siding facilities were not sufficient for the flow of traffic because of the movement of coal from nearby districts, which often caused a bottleneck.

At Tsingtao terminal, facilities were not sufficient to meet the demands put on them and this situation would become worse as railway traffic increased. Some of the facilities built by the Japanese at Tsingtao had been destroyed during the war and had never been replaced. Occasionally the traffic over the sections of the railway near the Wei and the Taku Rivers was disrupted by floods.

14. On the Tientsin-Pukow line at three points the flow of traffic was likely to be disrupted. At a point three stops south of Tsinan (Chiaomitien, 3509/4717/1648) there was a steep upward grade from north to south of one meter per kilometer. The Chinese Communists had been surveying this section since 1951 in order to improve it. At Kuchen (N 33-20, E 117-22) and at South Souchou (N 33-39, E 117-04) heavy rain often caused flood waters to come to the level of the rails; then the trains were forced to move slowly. The entire Huai-Nan line (from T'ienchiaan, N 32-40, E 117-06, to Yuchii, N 31-27, E 118-16) was disrupted during the flood season. This condition was very serious before the dredging of the Huai River.

Security

15. Each railway office had a Public Security Bureau (PSB) that had charge of patrolling the lines and the facilities. The PSB covered the entire line and had authority over all personnel of the railway administration. It could arrest or remove any employee of the railway considered to be a security risk. Although PSB personnel were non-technical, individuals often held technical offices; in most cases they were the heads of the personnel offices. Members of the PSB were a source of fear to all railway employees. Public Security forces were stationed at all railway facilities and at large bridges. Forty men stationed at the Yellow River bridge on the Tientsin-Pukow line, had a barracks there to house them. Local forces were recruited to assist the railway police. The small bridges had watch towers with five or six men watching each bridge. Along the Tientsin-Pukow line train passengers were asked to pull down window blinds at the Yellow River Bridge in Tsinan and at the Huai River Bridge, on the Tsinan-Tsingtao line, at Chengyang, the Wei River Bridge, and Ts'angk'ou (N 36-12, E 120-24).